

**Superfund Policy Statements and Guidance Regarding Disposition of Radioactive Waste in
Non-NRC Licensed Disposal Facilities - 13407**

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ABSTRACT

This talk will discuss EPA congressional testimony and follow-up letters, as well as letters to other stakeholders on EPA's perspectives on the disposition of radioactive waste outside of the NRC licensed disposal facility system. This will also look at Superfund's historical practices, and emerging trends in the NRC and agreement states on waste disposition.

INTRODUCTION

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, was enacted to protect citizens from the dangers posed by abandoned or uncontrolled hazardous waste sites, including radioactively contaminated sites. A comprehensive regulation known as the National Oil and Hazardous Substances Pollution Contingency Plan or NCP contains the guidelines and procedures for implementing the Superfund program. The disposition of radioactively contaminated material from CERCLA sites, particularly when it is not going off-site to an NRC-licensed disposal facility may result in heightened stakeholder interest. EPA has previously issued guidance documents and other public documents that may be of assistance to decision-makers at CERCLA sites.

METHOD AND RESULTS

Because every Superfund site is unique, cleanups must be tailored to the specific needs of each site. There are, however, two requirements established by CERCLA and defined in the NCP that must be met for every remedy selected. CERCLA requires that all remedial actions at Superfund sites must be protective of human health and the environment. Therefore, cleanup actions are developed with a strong preference for remedies that are highly reliable, provide long-term protection and provide treatment of the principle threat to permanently and significantly reduce the volume, toxicity, or mobility of the contamination. Superfund site cleanups should also protect ground waters that are current or potential sources of drinking water to drinking water standards whenever practicable. In addition, CERCLA specifically requires Superfund actions to attain or waive the standards and requirements found in other State and Federal environmental laws and regulations. This mandate is known as compliance with "applicable or relevant and appropriate requirements" or ARARs.

The NCP establishes the requirements for the Superfund program. The NCP reiterates CERCLA's goal of selecting remedies that protect human health and the environment, that maintain protection over time, and that minimize untreated waste. The NCP sets forth nine criteria for selecting Superfund remedial actions. These evaluation criteria are the standards by

which all remedial alternatives are assessed and are the basis of the remedy selection process. The criteria can be separated into three levels: threshold, balancing, and modifying. The first two criteria are known as “threshold” criteria. They are a reiteration of the CERCLA mandate that remedies must: (1) at a minimum assure protection of human health and the environment and (2) comply with (or waive) requirements of other Federal environmental laws, more stringent State environmental laws and State facility-siting laws. They are the minimum requirements that each alternative must meet in order to be eligible for selection as a remedy.

After the threshold criteria are applied, seven other NCP evaluation criteria are considered. Five of the criteria are known as the “balancing” criteria. These criteria are factors with which tradeoffs between alternatives are assessed so that the best option will be chosen, given site-specific data and conditions. The criteria balance long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. The final two criteria are called “modifying” criteria: information or comments from either (1) the State or (2) the community may modify the preferred remedial action alternative or cause another alternative to be considered or selected.

EPA HQ Consultation Guidance for On-Site Disposal

On July 26, 2000, EPA issued the guidance document “Headquarters Consultation for Radioactively Contaminated Sites” (OSWER No. 9200.1-33P). This memorandum request that EPA Regional Offices consult with Headquarters on CERCLA response decisions involving (1) onsite management (e.g., capping of material in place, building disposal cells) of radioactive materials, or (2) when there is a potential national precedent setting issue related to a radioactive substance, pollutant or contaminant. This consultation policy for CERCLA site decisions that are addressing radioactive constituents is applicable to Fund and potentially responsible party (PRP)-lead sites for which a CERCLA remedial or non-time-critical (NTC) removal action is planned. This consultation service is also available (although not included in this request by Headquarters) for decisionmakers at other Federal agency-lead and State-lead CERCLA radioactively contaminated sites, or radioactively contaminated sites where Resource Conservation and Recovery Act (RCRA) Corrective Action is being conducted.

It should be noted that although this guidance on consultation request applies specifically to onsite management of radioactively contaminated material, such response actions are generally not nationally precedent setting. Further, it was not the intent of this memo to discourage these types of response actions where appropriate. However, sites where these actions have been conducted have generally received much greater stakeholder interest, even in comparison with other radioactively contaminated sites. As a result, this consultation guidance was intended to provide added sensitivity to stakeholder concerns at the national level. This guidance did not address off-site disposal of radioactive waste from CERCLA response actions.

EPA Testimony to the Senate Committee on Environment and Public Works

On July 25, EPA Principal Deputy Assistant Administrator for the Office of Solid Waste and Emergency Response, Michael Shapiro, testified before the Senate Committee on Environment and Public Works. This testimony was given at a congressional hearing to discuss the low

activity radioactive wastes from the Formerly Utilized Sites Remedial Action Program (FUSRAP) sites. Mr. Shapiro's testimony addressed the authorities that EPA has over the off-site disposal of FUSRAP sites and particularly the material to as 11e.(2) byproduct material under the Atomic Energy Act (AEA). Since FUSRAP response actions are conducted under CERCLA the information in this testimony has relevance towards other CERCLA responses.

The testimony discussed that "part of the NCP is the Off-Site Rule (40 CFR 300.440). This rule implements the requirements of CERCLA 121(d)(3). CERCLA 121 (d)(3) requires that waste removed under Superfund only go to a facility that is in compliance with Federal and applicable state disposal requirements, and be disposed of at a unit that is not releasing any hazardous waste, or constituents thereof, into the groundwater or surface water or soil. This rule has three main requirements for facilities receiving Superfund waste.

1. The receiving facility must be in compliance with RCRA or other applicable Federal or State requirements.
2. At hazardous management unit receiving the waste management unit receiving these wastes must not currently and should not be expected to release contaminants into the environment. Any releases from other units at the facility must be controlled.
3. At other than hazardous waste management facilities, environmentally significant releases must be controlled.

To ensure that the waste removed under the NCP goes to a disposal facility that meets these requirements, the party performing the cleanup should contact the EPA regional office for the region where the disposal facility is located, and request a determination under the Off-Site Rule. When EPA receives a request for a determination under the Off-Site Rule, the Regional Office must determine whether the facility meets the requirements of the rule. If there is no standard, such as a regulation or a permit condition for a particular waste, then the facility is not in violation if it accepts that waste. If a facility is found in violation of a standard, then EPA notifies the facility, and the State, of the unacceptability. Once a facility has removed the cause of this unacceptability, EPA can make a determination that it can accept Superfund waste. If a facility has a violation that cannot be undone, such as an unpermitted air emissions release, then for the facility to again become acceptable it must complete all actions that EPA determines are necessary to rectify the violation, e.g. paying all penalties, and prevent recurrences."

The testimony further explained the applicability of RCRA to AEA 11.e.(2) byproduct material by stating that "under RCRA, EPA regulates solid and hazardous waste. Hazardous wastes are a subset of solid wastes that may cause or significantly increase illness, or may pose a hazard to human health or the environment when improperly managed. To be regulated as a hazardous waste, a material must first meet the definition of a solid waste, in other words, RCRA only allows EPA to regulate materials that are solid wastes.

The RCRA statutory definition of solid waste excludes "source, special nuclear and byproduct material as defined by the Atomic Energy Act." See 42 U.S.C. 6903(27). Therefore, materials meeting the AEA definition of byproduct material (which includes Section 11e.(2) material) are not regulated under RCRA, because those materials are not solid waste. To date, EPA has not distinguished between the kinds of material referred to in Section 11e.(2) generated before 1978

and such material generated after 1978, and EPA does not regulate any of this material under RCRA. EPA can regulate the hazardous waste components of wastes that contain mixtures of 11e.(2) material and RCRA hazardous wastes.

EPA's regulations do allow the disposal of non-hazardous wastes, in this case, 11e.(2) wastes, at hazardous waste facilities. Unless prohibited by some other regulation or permit condition, wastes that are not hazardous can be disposed of at a hazardous waste landfill. This allows companies to dispose of non-hazardous wastes at hazardous waste facilities with generally more controls than a municipal solid waste landfill, or an industrial non-hazardous waste landfill. Unless otherwise precluded, States authorized to operate the program under RCRA can, however, regulate material that is not regulated as hazardous at the federal level. Their regulations can be broader in scope than EPA's regulations, or they can be more stringent. States can, for example, establish standards for the disposal of specific types of federally unregulated radiological material (i.e., NORM, exempt, or "unimportant quantities"). In addition, state standards may be more stringent than federal standards. This provides flexibility to the States to fashion a regulatory program that responds to their particular situation so long as it is at least as stringent as the federal program."

EPA Letter Idaho State Senator Clint Stennett

On June 26, 2000, EPA Assistant Administrator's Robert Perciasepe for the Office of Air and Radiation and Timothy Fields, Jr. for the Office of Solid Waste and Emergency Response wrote a letter to Idaho State Senate Minority Leader Clint Stennett. This EPA letter responded to questions for EPA that were contained in a letter sent February 28, 2000, from Clint Stennett to Chairman Richard Meserve of NRC. The questions to EPA concerned unregulated disposal of AEA 11e.(2) byproduct material generated before 1978. Mr. Stennett had asked what are the appropriate health and safety protections necessary for workers, the public, and the environment relative to the disposal of radioactive materials that can be disposed at EnviroSafe's facility under its permit? EPA's response letter answered that "It is important that waste disposal is protective of human health from carcinogenic and noncarcinogenic risks, and the environment including worker health and safety. EPA's general measure of protectiveness under RCRA and CERCLA includes, but is not limited to the risk range (generally 1 in 10,000 to 1 in 1,000,000 risk of contracting cancer), hazard index (HI) (generally a HI of less than 1 for noncarcinogens with the same toxic endpoint or mechanism of action), and protection of the environment. Protection of natural resources such as ground water is a key consideration in evaluating the protection of human health and the environment. EPA believes that ground waters should be monitored and protected to ensure beneficial use and this includes ensuring that Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act are not exceeded, where ground waters are a current or potential source of drinking water. The drinking water resources should be protected throughout the plume (i.e., in the aquifer). These standards are consistent with standards generally used under EPA statutes and particularly with respect to management of RCRA hazardous waste.

Typical protections for workers at a radioactive waste disposal facility would include shielding, limiting the time spent handling radioactive material, and dosimetry. Environmental monitoring that is capable of early detection of releases would be appropriate. Without more information,

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we cannot comment on the effectiveness of Envirosafe's worker protection or monitoring programs for radionuclides.”

EPA Site-Specific Evaluations Based on Stennett Analyses

EPA has used criteria that were discussed in the June 26, 2000, letter to Stennett in several site-specific evaluations. Previously the U.S. Ecology facilities permit was determined to be protective for taking radioactive waste from the Denver Radium Superfund site.

Recently EPA and the Air Force worked together on an evaluation of on-site disposal in a consolidated engineered cell at the McClellan Air Force Base in California. This analysis is contained in the document “Risk Assessment for the Focused Strategic Sites Consolidated Unit Radiological Waste Acceptance Criteria” issued in February 2012. This document can be found at the following website on the Internet at:

http://afarpaar.lackland.af.mil/AR/getdoc/MCCLN/MCCLN_AR_7536.pdf.

EPA has worked with the State of Pennsylvania and Idaho at the Safety Light site in Pennsylvania to change the waste code to allow NRC-licensed material to be disposed of in a non-NRC licensed disposal unit at U.S. Ecology in Idaho. This evaluation is still receiving review by management within EPA and the two states.

RESULTS

The evaluations conducted using the criteria in the Stennett letter help facilitate waste disposal that complies with the NCP. As more site-specific evaluation documents are issued, they may be useful resources for other decision-makers at other sites to review when considering disposal options.